

Safety Instructions

Liquiphant M

FTL50, FTL50H, FTL51, FTL51H, FTL51C

Ex de IIC T3...T6, Ex de IIB T3...T6
NEPSI GYJ03102



XC008F-A

en - Safety instructions for electrical apparatus for explosion-hazardous areas.

zh - 爆炸环境中电气仪表的安全指南。

Liquiphant M

FTL50, FTL50H, FTL51, FTL51H, FTL51C

english

**Associated
Documentation**

This document is an integral part of the following Operating Instructions:
KA163F/00, KA164F/00, KA165F/00, KA173F/00

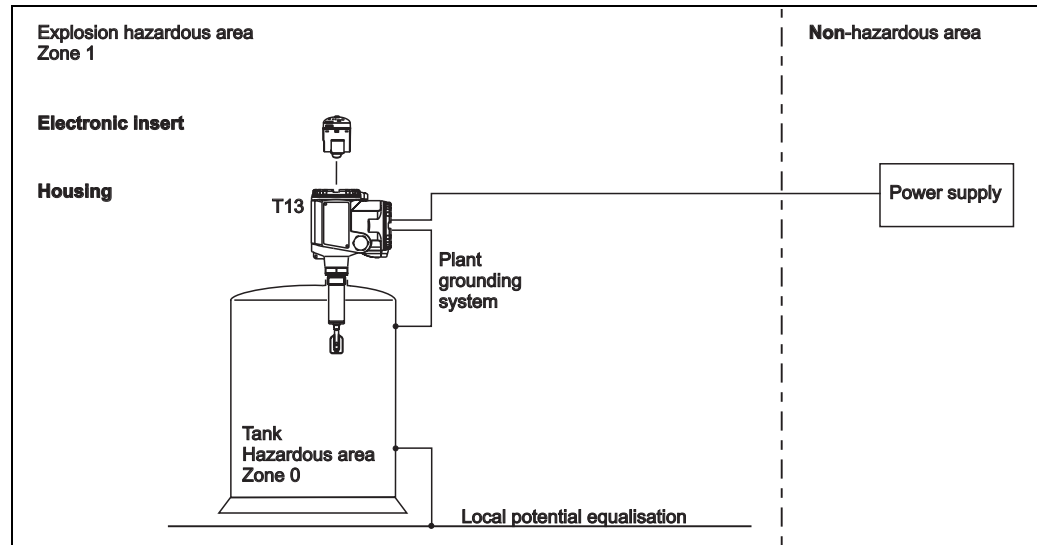
The Operating Instructions which are supplied and correspond to the device type apply.

Designation

Explanation of the labelling and type of protection can be found in the explosion protection brochure.

Designation of explosion protection

Ex	de	IIC	T3...T6
Ex	de	IIB	T3...T6



XC008en01

Electronic insert

FEL51, FEL52, FEL54, FEL55, FEL56, FEL57, FEL58, FEL50A

Type of protection	Type
Ex de IIC T3...T6	FTL50, FTL50H, FTL51, FTL51H, FTL51C with coating of enamel or conductive PFA
Ex de IIB T3...T6	FTL51C with coating of ECTFE or non-conductive PFA

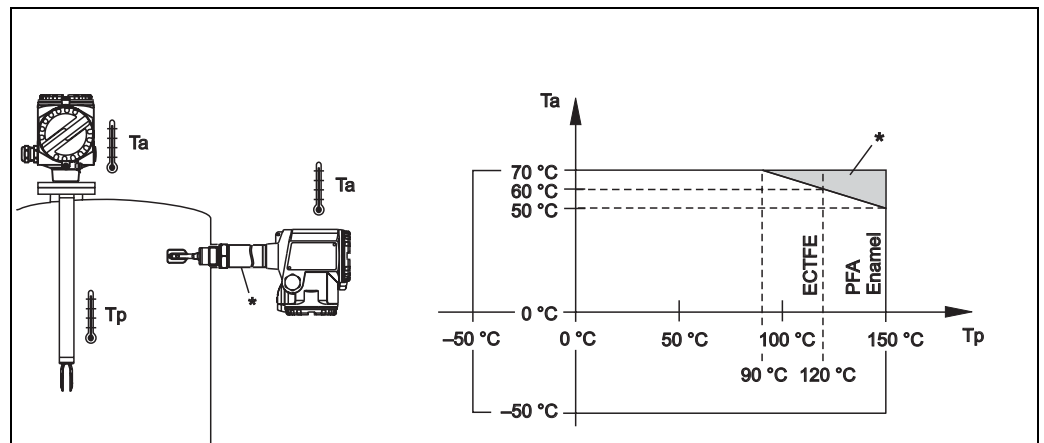
**Safety instructions:
Installation**

- Comply with the installation and safety instructions in the Operating Instructions.
- For installation, use and maintenance of the device, users must also observe the requirements stated in the Operating Instructions and the standards GB3836.15-2000 and GB50058-1992.
- Pay attention to the maximum process conditions according to the manufacturer's Operating Instructions.
- At high medium temperatures: note flange pressure load capacity as a factor of temperature.
- Connect the device using suitable cable and wire entries or using piping systems of protection type "Intrinsic safety (Ex e)".
- To maintain the ingress protection IP66/67 of the housing, install the housing cover and cable glands correctly.
- Close unused entry glands with approved (Ex e) sealing plugs.
- Install the device to exclude any mechanical damage or friction during the application. Pay particular attention to flow conditions and tank fittings.
- Support extension tube of the device if a dynamic load is expected.
- Install the device to exclude impact and friction sparks on the aluminium housing.

The dependency of the ambient and process temperatures upon the temperature class:

Type	Temperature class	Process temperature T_p (process): sensor	Ambient temperature T_a (ambient): electronics
FTL50, FTL50H, FTL51, FTL51H FTL51C (ECTFE, PFA or enamel coating)	T6	-50 °C... +85 °C	-50 °C...+70 °C
FTL50, FTL50H, FTL51, FTL51H FTL51C (ECTFE, PFA or enamel coating)	T5	-50 °C...+100 °C	FTL50, FTL51: -50 °C...+70 °C with temperature spacer; without temperature spacer see temperature diagram below
FTL51C (ECTFE coating)	T4	-50 °C...+120 °C	
FTL50, FTL50H, FTL51, FTL51H FTL51C (PFA or enamel coating)	T4	-50 °C...+135 °C	
FTL50, FTL50H, FTL51, FTL51H FTL51C (PFA or enamel coating)	T3	-50 °C...+150 °C	

FTL50, FTL50H, FTL51, FTL51H, FTL51C



* additional temperature range for sensors with temperature spacer or pressure-tight bushing

Safety instructions: Zone 0

- The sensor part of the device approved for Zone 0 does not cause any ignition hazards if it is operated under non-atmospheric pressures and temperatures.
Permissible process temperatures for operation in accordance with manufacturer's specifications: dependent on ambient temperature; see table and temperature graphics.
Permissible pressures for operation in accordance with manufacturer's specifications: $p_e = -1 \text{ bar} \dots +100 \text{ bar}$, dependent on process connection; see manufacturer's Operating Instructions.
- Only install the devices in media for which the wetted materials have sufficient durability (e.g. process connection seal).

Operating instructions:

- Do not open the connection or electronics compartments under voltage in an explosive atmosphere.
- Waiting time before opening the electronics compartment after switching off the power supply: 17 minutes.
- Do not disconnect electrical connections under voltage in an explosive atmosphere.

Liquiphant M

FTL50, FTL50H, FTL51, FTL51H, FTL51C

文
中

相关文档

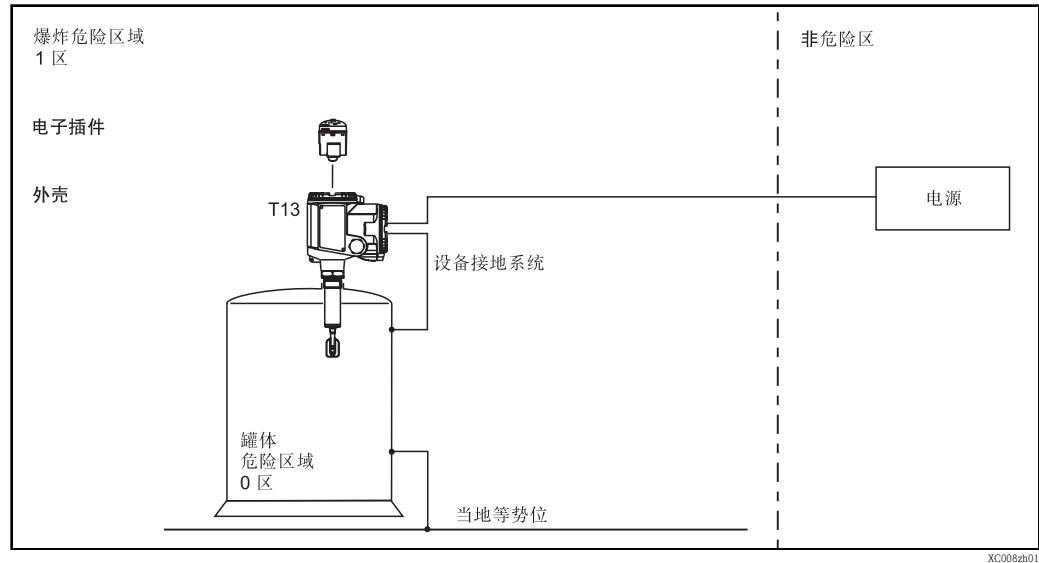
该文件是下列操作手册的组成部分：
KA163F/00, KA164F/00, KA165F/00, KA173F/00
根据用户订购仪表的具体型号，提供相应的操作手册。

名称

防爆标志和防护类型的说明请查询防爆手册。

防爆代号

Ex	de	IIC	T3...T6
Ex	de	IIB	T3...T6



XC008zh01

电子插件

FEL51, FEL52, FEL54, FEL55, FEL56, FEL57, FEL58, FEL50A

防护类型	类型
Ex de IIC T3...T6	FTL50, FTL50H, FTL51, FTL51H, FTL51C 带有搪瓷或导电 PFA 涂层
Ex de IIB T3...T6	FTL51C 带 ECTFE 或非传导 PFA 涂层

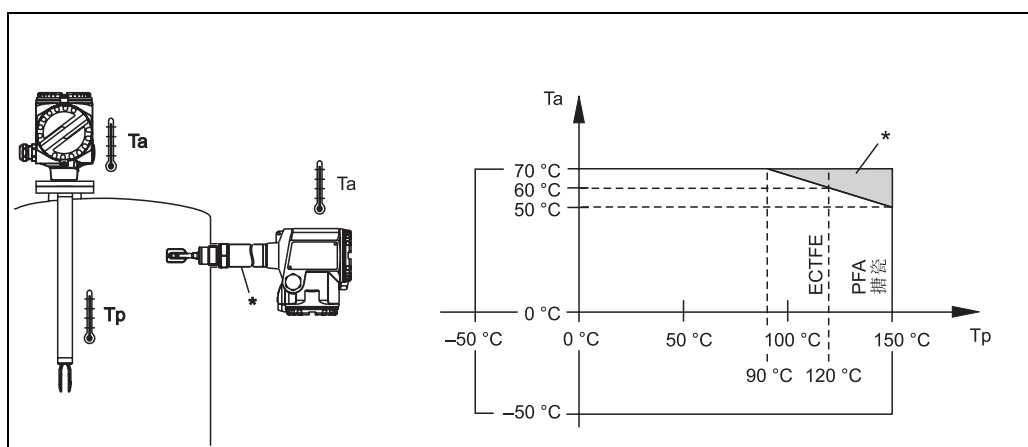
安全指南：安装

- 遵守“操作说明”中的安装和安全指南。
- 仪表在安装、使用和维护过程中，用户必须遵守操作手册和 GB3836.15-2000 和 GB50058-1992 标准中陈述的要求。
- 按制造商操作说明，请注意极端运行条件。
- 高输入温度时：注意由温度因变的凸缘压力负荷量。
- 使用合适的电缆及电缆入口，或使用防护类型管路系统连接仪表。
- 要维持外壳入口防护 IP66/67，请正确安装外壳封盖和电缆栓塞。
- 采用通过防爆认证 (Ex e) 的密封塞堵塞未使用的电缆入口。
- 安装仪表以排除任何在应用期间出现的机械损伤或磨损。请尤其注意流量状况和液罐装置。
- 如果允许动态负载，则需支持仪表的伸缩管。
- 安装仪表时要避免铝制外壳上的冲击火花和摩擦火花。

环境温度和过程温度对温度等级的依从关系：

类型	温度等级	过程温度 T_p (过程): 传感器	环境温度 T_a (环境): 电子部件
FTL50, FTL50H, FTL51, FTL51H FTL51C (ECTFE, PFA 或搪瓷涂层)	T6	-50 °C... +85 °C	-50 °C... +70 °C
FTL50, FTL50H, FTL51, FTL51H FTL51C (ECTFE, PFA 或搪瓷涂层)	T5	-50 °C... +100 °C	FTL50, FTL51: -50 °C... +70 °C 带温度垫片;
FTL51C (ECTFE 涂层)	T4	-50 °C... +120 °C	
FTL50, FTL50H, FTL51, FTL51H FTL51C (PFA 或搪瓷涂层)	T4	-50 °C... +135 °C	不带温度垫片, 参见下述温 度图表
FTL50, FTL50H, FTL51, FTL51H FTL51C (PFA 或搪瓷涂层)	T3	-50 °C... +150 °C	

FTL50, FTL50H, FTL51, FTL51H, FTL51C



* 带温度垫片或密封衬套的传感器额外温度范围

XC008zh02

安全指南：0 区

- 经批准可用于 0 区的仪表传感器部分不会导致任何引燃危险 (当不在非大气压和温度下运行时)。符合制造商技术规范的运行过程温度：
取决于环境温度；参见表格和温度图表。
符合制造商技术规范的运行过程压力：
 $p_e = -1 \text{ bar} \dots +100 \text{ bar}$ ，取决于工艺连接件；参见制造商操作说明。
- 当仪表的受潮部件具有足够耐久度时，才可将仪表安装于介质中。
(例如工艺连接件密封)。

操作说明：

- 在爆炸气体环境中使用仪表时，请勿开启接线腔或电子腔。
- 关闭电源后打开电子腔前请稍候：17 分钟。
- 请勿在爆燃性空气中带压断开电子连接件。

www.endress.com/worldwide

Endress+Hauser 

People for Process Automation

